

ABSTRACT OF THE DISCLOSURE

The present invention pertains to a data storage device. The data storage device includes a storage medium having an electrode and an electrolyte layer positioned on the electrode. The data storage device also includes at least one probe configured to contact the electrolyte layer. In
5 addition, the storage medium includes a voltage supply device configured to supply voltage through the at least one probe and the electrode to thereby create a circuit between the at least one probe and the electrode. The level of voltage supplied through the at least one probe allows at least one of writing, reading, and erasing operations on the one or more memory cells of the storage medium.

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